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Dafoe

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(54) **TRASH CAN ASSEMBLY**

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B65F 1/00	(2006.01)
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B62B 3/10	(2006.01)
B62B 5/06	(2006.01)
B62B 5/04	(2006.01)

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CPC ***B65F 1/068*** (2013.01); ***B62B 3/02*** (2013.01); ***B62B 3/106*** (2013.01); ***B62B 5/0433*** (2013.01); ***B62B 5/061*** (2013.01); ***B65D 33/28*** (2013.01); ***B65F 1/002*** (2013.01); ***B65F 1/062*** (2013.01); ***B65F 1/1415*** (2013.01); ***B65F 1/1452*** (2013.01); ***B65F 1/1473*** (2013.01); ***B65F 1/1615*** (2013.01); ***B65F 1/1646*** (2013.01)

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See application file for complete search history.

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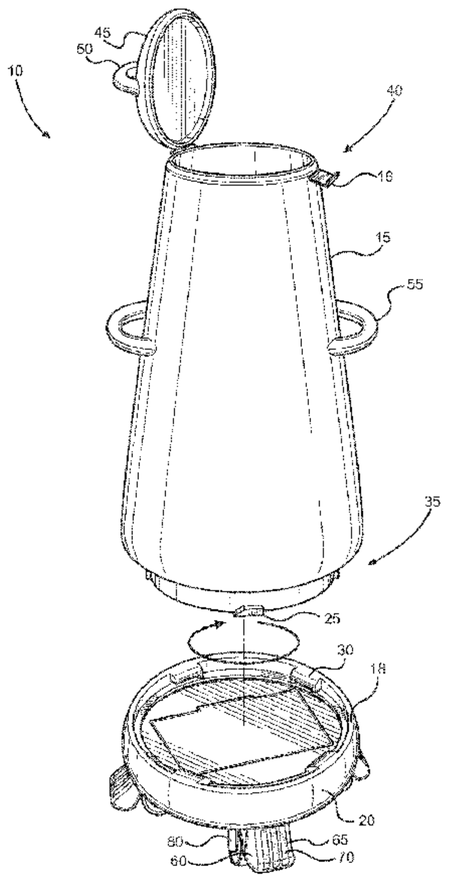
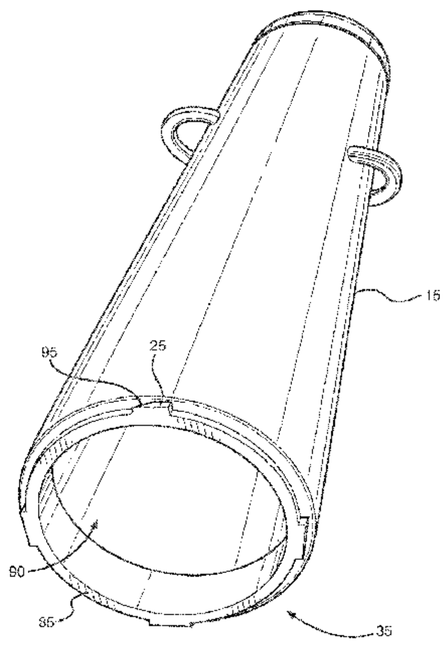
(57) **ABSTRACT**

A trash can assembly is provided. The trash can assembly provides a trash can facilitating the removal of trash through a bottom end, rather than an upper end of the trash can. The trash can assembly includes a tapering trash receptacle mountable onto a base and a securing mechanism enabling the trash receptacle to be twistably secured thereon via a plurality of notches disposed on the trash receptacle and a plurality of sockets disposed on the base. The base includes legs for immobilizing the trash receptacle when emptying and wheels for moving the trash can as desired. The base includes a watertight interior compartment sized to receive a box for storing trash bags. The trash can assembly further includes a trash bag having the same size and shape of the trash receptacle and including a length greater than the length of the trash receptacle.

14 Claims, 5 Drawing Sheets





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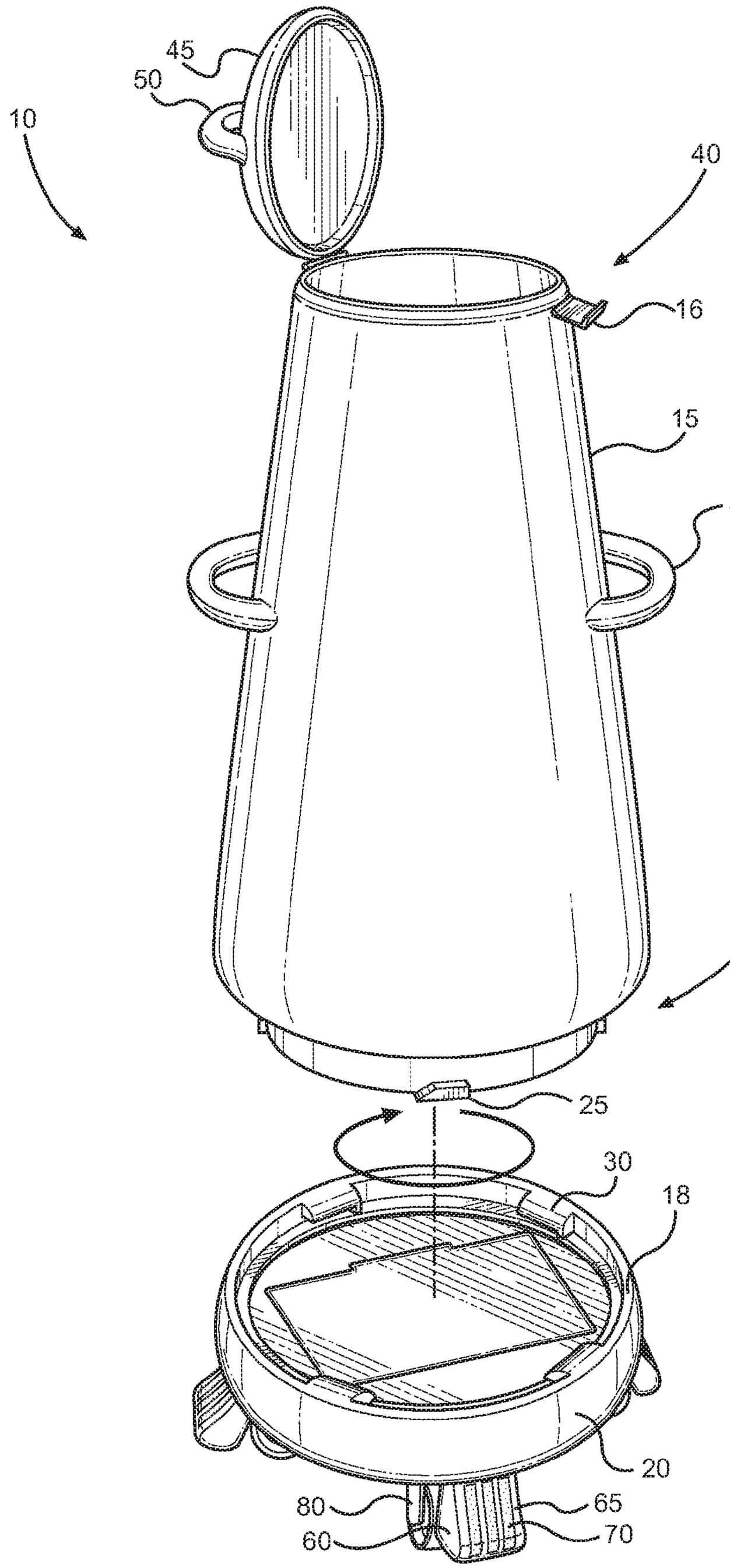

FIG. 1

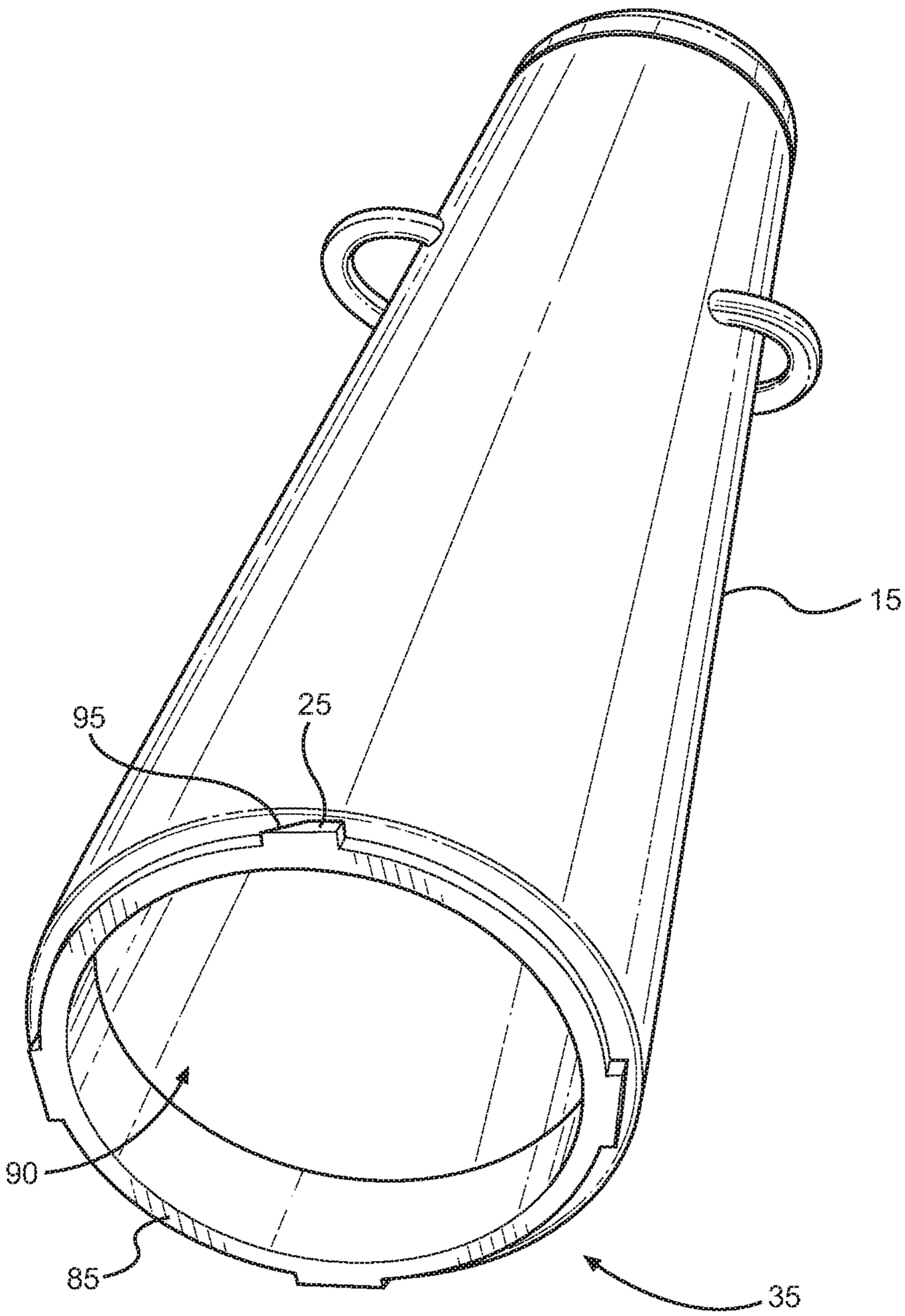

FIG. 2

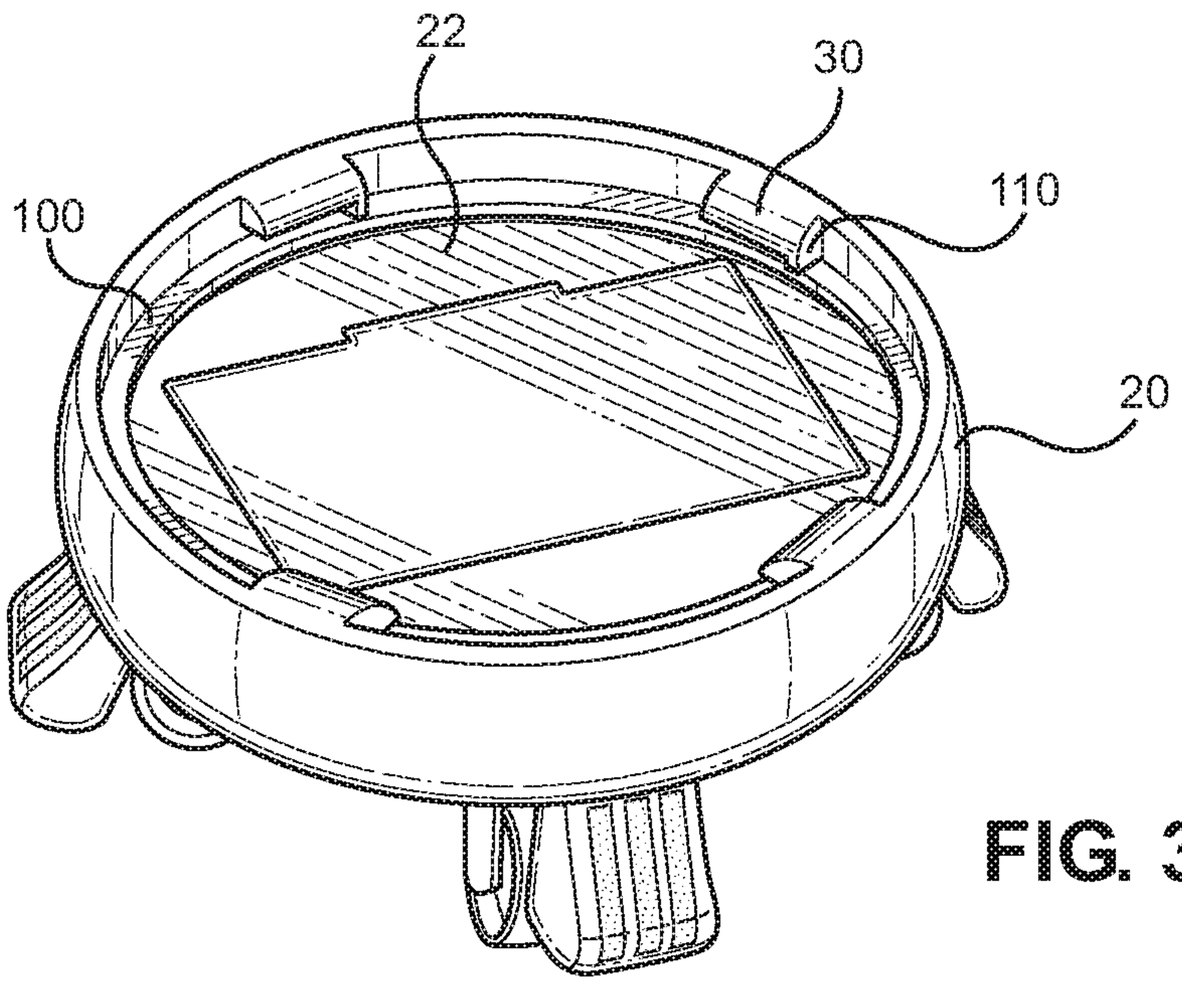

FIG. 3A

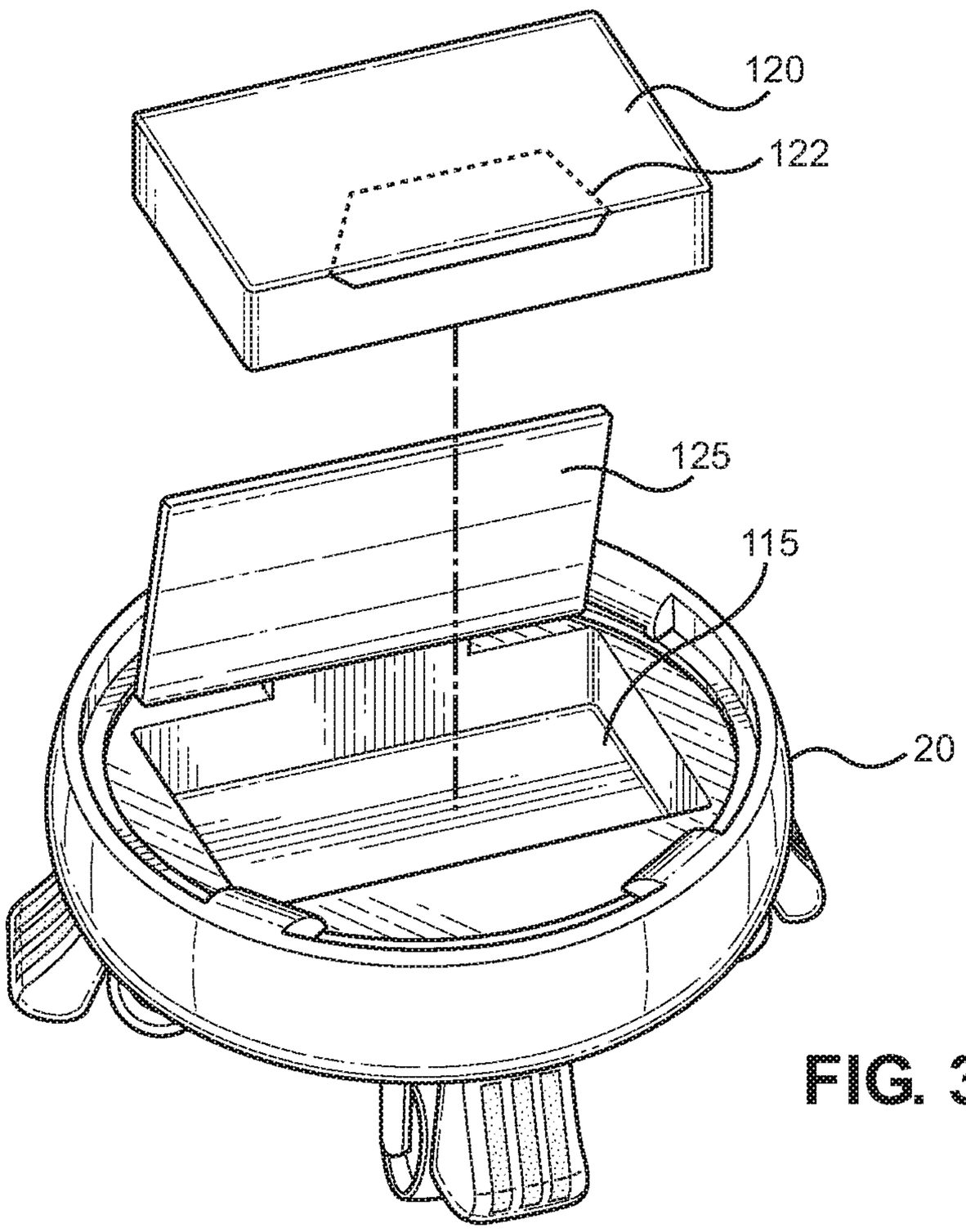

FIG. 3B

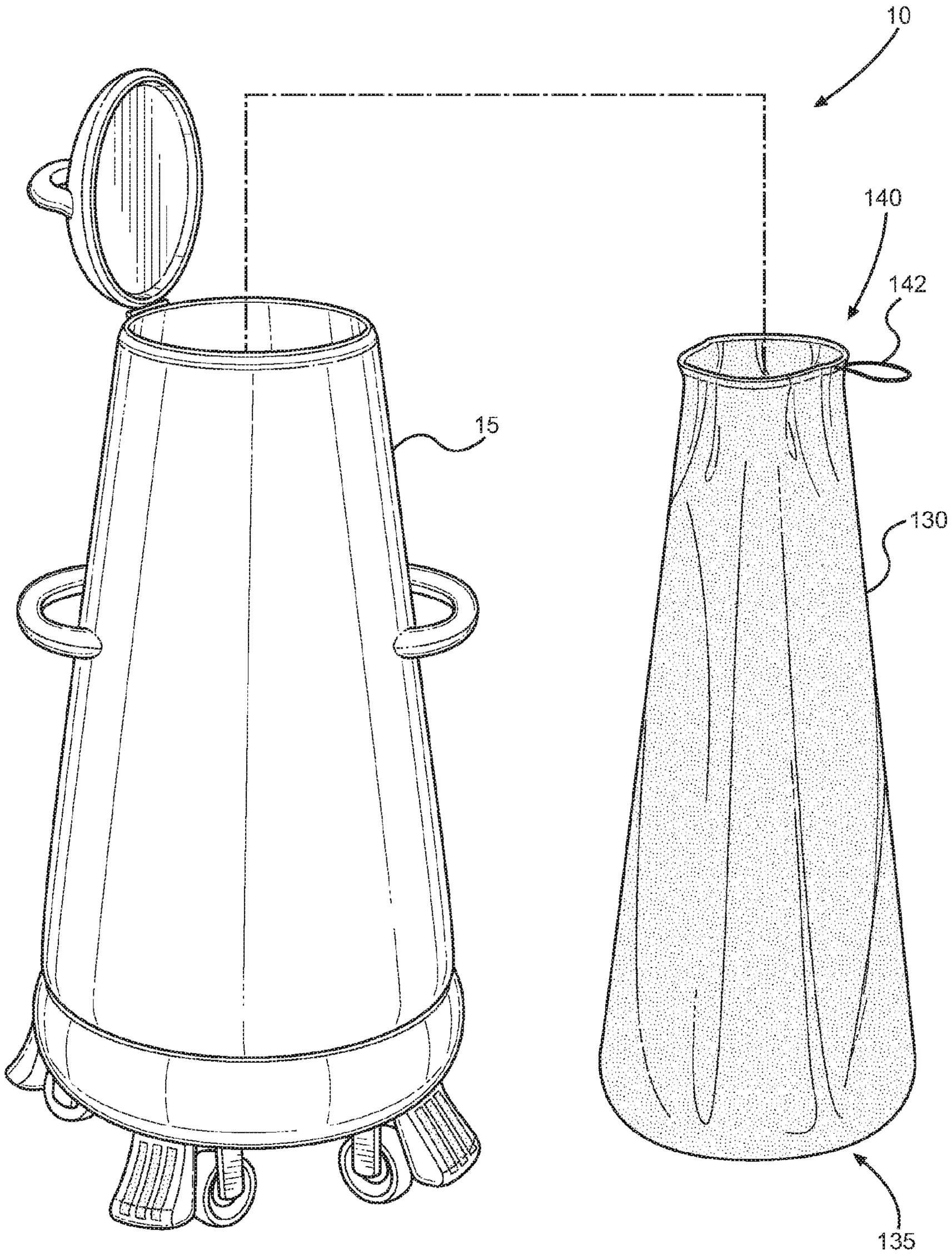

FIG. 4

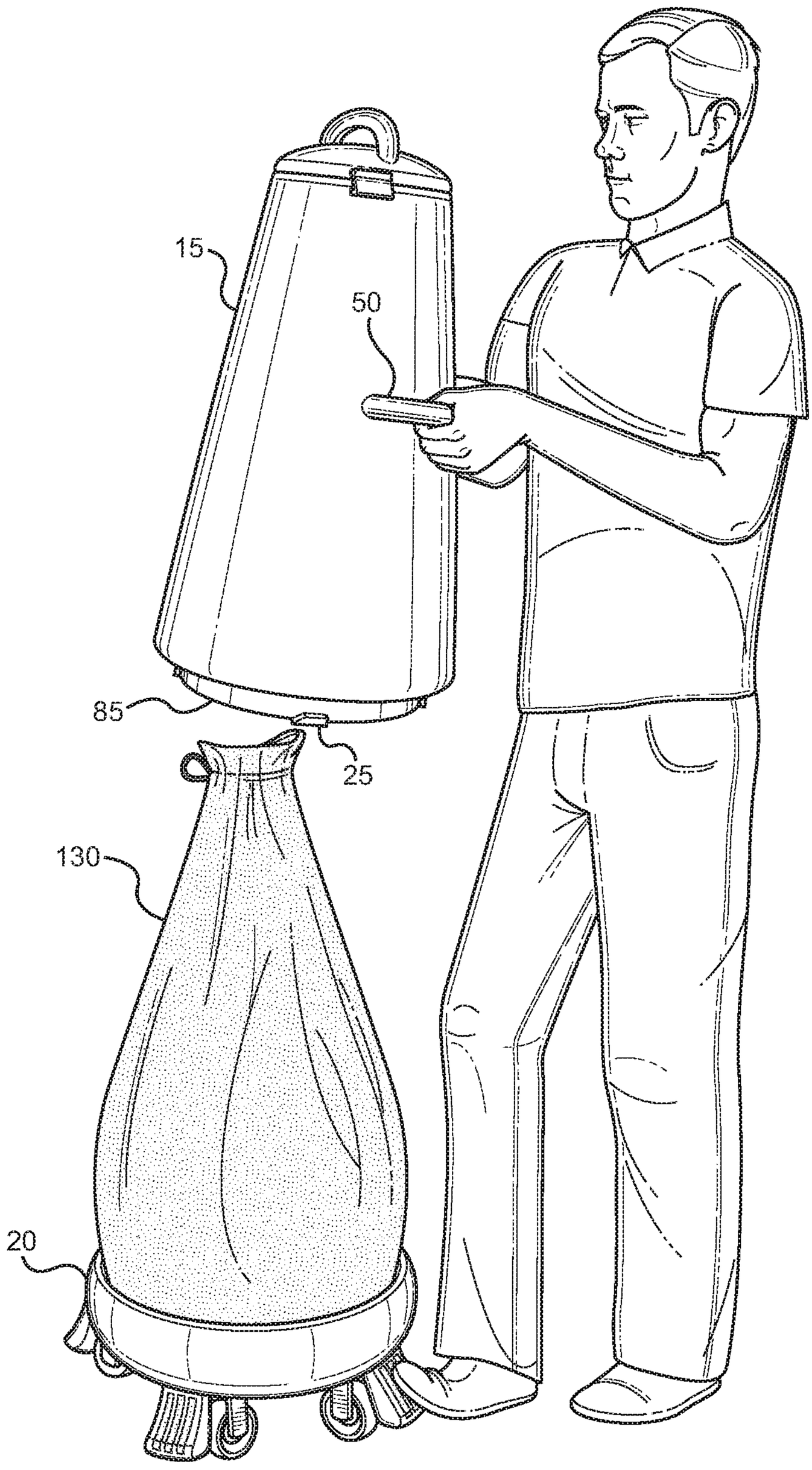

FIG. 5

TRASH CAN ASSEMBLY

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Application No. 62/263,817 filed on Dec. 7, 2015. The above identified patent application is herein incorporated by reference in its entirety to provide continuity of disclosure.

BACKGROUND OF THE INVENTION

The present invention relates to trash can systems for collecting and disposing trash. More specifically, the present invention relates to a trash can assembly facilitating the removal of trash through a bottom end, rather than an upper end of the trash can, by means of a tapering trash receptacle mountable onto a base and a securing mechanism enabling the trash receptacle to be twistably secured and removed from the base.

It is often the practice to position large receptacles of trash in areas where many people congregate. The receptacles used range between ten to fifty gallon cylindrical containers or cans. To capture the trash and enable easy disposal of the same, large plastic bags are normally placed in the cans. When filled, the bags are removed for eventual placement in a dump site.

A problem with this arrangement is that when the plastic bags are filled and ready for removal, lifting the bags from the upper opening of the cans becomes onerous. When a plastic bag becomes filled, the bag forces out air from between the can and the plastic bag, thereby creating a partial vacuum when the plastic bag is being removed. The creation of the partial vacuum causes the removal of the bag from the can to be difficult, thereby requiring a greater lifting force which can be difficult to achieve for a lot of users.

Another problem with these receptacles is that they offer no storage solution for additional trash bags. In order to insert another bag within the receptacle, a user must retrieve a bag from an often distant and inconvenient location, thereby wasting time and expending unnecessary effort.

It is therefore an object of the invention to provide a new and improved trash can assembly which solves these problems.

SUMMARY OF THE INVENTION

In view of the foregoing disadvantages inherent in the known types of trash can systems now present in the prior art, the present invention provides a trash can assembly wherein the same can be utilized for providing convenience for the user when collecting and disposing trash. The present invention comprises a trash receptacle including an upper end having an opening and a bottom end having an opening. The trash receptacle tapers in diameter from the bottom end to the upper end, such that the opening of the bottom end includes a diameter larger than a diameter of the opening of the upper end. The opening of the upper end provides access to an interior volume of the trash receptacle, which is configured to receive a trash bag therein. The bottom end includes a lip extending therefrom that defines the opening of the bottom end. A plurality of notches are annularly disposed around the lip and extending perpendicularly outward relative therefrom. A base including an interior channel is configured to mountably receive the lip of the trash receptacle. The interior channel is annularly disposed about an interior of the base, wherein the lip of the trash receptacle

is configured to rotate within the channel. The interior channel includes a plurality of sockets configured to slidably receive the plurality of notches thereunder. The plurality of sockets are disposed about an upper perimeter edge of the channel, each of the plurality of sockets include a wall extending into the channel that is configured to stop a forward progression of the plurality of notches and secure the notches under the plurality of sockets. A plurality of legs are disposed annularly about a lower perimeter edge of the base. The plurality of legs extend downward and outward at an angle relative to the base. A plurality of wheels are rotatably coupled to the base. The plurality of wheels are disposed annularly about a lower end of the base.

BRIEF DESCRIPTION OF THE DRAWINGS

Although the characteristic features of this invention will be particularly pointed out in the claims, the invention itself and manner in which it may be made and used may be better understood after a review of the following description, taken in connection with the accompanying drawings wherein like numeral annotations are provided throughout.

FIG. **1** shows an exploded view of the trash can assembly.

FIG. **2** shows a perspective view of the bottom end of the trash receptacle of the trash can assembly.

FIG. **3**A shows a perspective view of the base of the trash can assembly.

FIG. **3**B shows a perspective view of the interior compartment of the base.

FIG. **4** shows a partial exploded view of one embodiment of trash can assembly.

FIG. **5** shows a view of the trash can assembly in use.

DETAILED DESCRIPTION OF THE INVENTION

Reference is made herein to the attached drawings. Like reference numerals are used throughout the drawings to depict like or similar elements of the trash can assembly. The figures are intended for representative purposes only and should not be considered to be limiting in any respect.

Referring now to FIG. **1**, there is shown an exploded view of the trash can assembly. The present invention provides a trash can assembly **10** that facilitates the collection and removal of trash through the bottom end of a trash can, rather than the upper end of the trash can. The trash can assembly **10** includes a trash receptacle **15** mountable onto a base **20**. The trash can assembly **10** includes a locking mechanism enabling he trash receptacle **15** to be inserted into the base **20** and secured to one another. In the depicted embodiment, the locking mechanism comprises a plurality of notches **25** disposed on the trash receptacle **15** and a plurality of sockets **30** disposed on the base **20**, wherein the trash receptacle **15** and base twist in opposing directions, such that the notches **25** secure within the sockets **30**.

The trash receptacle **15** includes a cylindrical housing having a hollow interior volume that is configured to receive a trash bag therein. The trash receptacle **15** includes a bottom end **35**, an upper end **40** having an opening, and a lid **45** hingedly connected to an edge of the upper end **40** for providing access to the opening of the upper end **40** and the interior volume. In one embodiment, the lid **45** includes a handle **50** that facilitates the opening and closing of the lid **45**. In another embodiment, the trash receptacle **15** includes a latch **16** for fastening the lid **45** to the trash receptacle **15**. In the depicted embodiment, the trash receptacle **15** includes a conical shape, wherein the trash receptacle **15** tapers from

the bottom end **35** to the upper end **40**, such that the diameter of the trash receptacle **15** gradually decreases from the bottom end **35** to the open end **40**. In one embodiment, the trash receptacle **15** includes a pair of handles **55** disposed on opposing sides thereof for grasping and transporting the trash can assembly **10**.

The base **20** includes a plurality of legs **60** that are evenly disposed around a lower perimeter edge of the base **20**. The plurality of legs **60** protrude vertically downward relative to an upper end **18** of the base **20** and extend outwardly and away from the base **20** at an angle. In one embodiment, the base **20** includes four legs positioned evenly around the lower perimeter edge. The plurality of legs **60** further include a front face **65** having a curved surface that provides an area for a user to position his or her foot when utilizing the trash can assembly **10**. In one embodiment, each of the front faces **65** of the plurality of legs **60** includes a grip that provides a means for gripping a leg when placing a foot thereon, such that a user may immobilize the trash can assembly **10** when using same. In the depicted embodiment, the grip includes a plurality of strips **70** extending along the longitudinal length of a leg. The plurality of strips **70** include a high-friction material, such as an adhesive or abrasive material.

The base **20** further includes a plurality of wheels **80** for facilitating the transportation of the trash can assembly **10** to various locations as desired by a user. The plurality of wheels **80** are positioned behind the plurality of legs **60**, such that there is a wheel positioned behind a leg at each of the plurality of legs **60**. The plurality of wheels **80** are rotatably coupled to the bottom of the base **20** such that the plurality of wheels **80** can turn and move in any direction. The plurality of wheels **80** include a length greater than the plurality of legs **60**, such that the plurality of legs **60** are suspended above the ground when the plurality of wheels **80** are placed on the ground. In this way, the plurality of legs **60** do not interfere with the movement of the trash can assembly **10** when moving it across a surface. Since the plurality of wheels **80** makes the trash can mobile at all times, the front face **65** of the plurality of legs **60** provides a user a surface to place their foot to immobilize the trash can assembly **10** when removing or employing the trash receptacle **15**.

Referring now to FIGS. **2** and **3**A there is shown a perspective view of the bottom end of the trash receptacle and a perspective view of the base, respectively. The bottom end **35** of the trash receptacle **15** includes a lip **85** disposed annularly about a perimeter edge thereof. In the depicted embodiment, the lip **85** protrudes and extends vertically, downwardly away from the bottom end **35** and defines a bottom opening **90** that provides egress for a trash bag from the interior volume of the trash receptacle **15**.

The base **20** of the trash can assembly **10** includes a channel **100** disposed annularly about an interior thereof. The channel **100** is configured to slidably receive the lip **85** therein and includes a smooth interior surface configured to enable the lip **85** to twist or rotate therein without limitation. In one embodiment, the channel **100** is sized such that the lip **85** can friction fit therein. The plurality of notches **25** are disposed evenly about a perimeter edge of the lip **85**. In one embodiment, the lip **85** includes four notches evenly disposed around the perimeter edge thereof. The plurality of notches **25** protrude and extend perpendicularly, outwardly relative to the lip **85**.

The plurality of sockets **30** are disposed about an upper perimeter edge of the channel **100**. The plurality of sockets **30** extend from the edge over the channel **100** and are configured to receive the plurality of notches **25** thereunder. Each of the plurality of sockets **30** includes a wall **110** that extends from a back end of each of the plurality of sockets **30** and into the channel **100** and prevents the notches from sliding past the sockets. The back walls **110** stop the plurality of notches **25** underneath the plurality of sockets **30**, thereby securing the plurality of notches **25** thereunder. In this way, the plurality of sockets **30** catch the trash receptacle **15** via the plurality of notches **25** when any upward force is exerted on the trash receptacle **15**, thereby preventing the separation of the trash receptacle **15** from the base **20**. In the depicted embodiment, the plurality of notches **25** are rectangular in shape and include a tapered side **95** for facilitating the sliding of the plurality of notches **25** underneath the plurality of sockets **30**. In this way, the plurality of notches **25** are not hindered when sliding underneath the plurality of sockets **30** by an uneven surface or tab.

Referring now to FIG. **3**B, there is shown a perspective view of the interior compartment of the base. The base **20** further includes an interior compartment **115** having an interior volume sized to receive a box **120** therein. The box **120** is configured to receive and store trash bags therein, and includes an opening **122** for providing access to the bags stored therein. In one embodiment, the interior compartment **115** and the box **120** are rectangular in shape such that the box **120** can fit flush inside of the interior compartment **115**. In alternative embodiments, the interior compartment **115** and box **120** may include alternative complimentary shapes and sizes, such that the box can fit within the interior compartment **115**. The interior compartment **115** further includes a cover **125** for providing access to the interior volume of the interior compartment **115**. The cover **125** is hingedly connected to an edge of the interior compartment and includes a watertight seal, such that when closed, any liquids leaking from a garbage bag in the container do not seep into the interior compartment **115** and contaminate the box **120** and bags therein. In the depicted embodiment, in a closed position, the upper surface of the cover **125** is flush with the upper surface **22** of the base **20** so as to allow the trash receptacle **15** to rest in an upright position thereon.

Referring now to FIG. **4**, there is shown a partial exploded view of one embodiment of trash can assembly. In one embodiment, of the trash can assembly **10** the trash can assembly includes a trash bag **130** having an interior volume for receiving trash therein. In the depicted embodiment, the trash bag **130** is unique to the trash can assembly **10** because it is the same size as the interior volume of the trash receptacle **15** and includes the same tapering shape as the trash receptacle **15**, thereby providing a matching fit for the trash receptacle **15**. The trash bag **130** includes the same tapering shape as the trash receptacle **15** in so far as the trash bag **130** tapers in diameter from a closed bottom end **135** to an open upper end **140**. The open upper end **140** includes a drawstring **142** for tightening and closing the open upper end **140**. The trash bag **130**, however, includes a length greater than the length of the trash receptacle **15**, such that the open upper end **140** extend past the opening of the upper end **40** of the trash receptacle **15**, when inserted therein. In this way, the open upper end **140** of the trash bag **130** can be folded over the edge of the upper end of the trash receptacle **15**.

Referring now to FIG. **5**, there is shown a view of the trash can assembly in use. In one use, once the trash bag **130** inside of the trash receptacle **15** is filled, a user may, using the handles **50**, twist or rotate the lip **85** of the trash receptacle **15** counterclockwise within the channel of the base **20** to disengage the plurality of notches **25** from the plurality of sockets. Once the notches **25** are disengaged, the

user may lift the trash receptacle **15** up and away from the base **20** and remove and discard the trash bag **130**. The user may then open the interior compartment of the base **20** and remove a bag therefrom. Next, the user may insert the lip **85** into the channel and rotate the trash receptacle **15** clockwise to slide the notches **25** underneath the sockets and secure them thereunder.

It is therefore submitted that the instant invention has been shown and described in various embodiments. It is recognized, however, that departures may be made within the scope of the invention and that obvious modifications will occur to a person skilled in the art. With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention.

Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

I claim:

1. A trash can assembly, comprising:

a trash receptacle including an upper end having an opening and a bottom end having an opening, the trash receptacle tapering in diameter from the bottom end to the upper end, such that the opening of the bottom end includes a diameter larger than a diameter of the opening of the upper end;

the opening of the upper end for providing access to an interior volume of the trash receptacle, the interior volume for receiving a trash bag therein;

the bottom end including a lip extending from the bottom end, the lip defining the opening of the bottom end;

a plurality of rectangular notches annularly disposed around the lip, the plurality of notches extending perpendicularly outward relative to the lip and each notch includes a tapered side;

a base including an interior channel for mountably receiving the lip of the trash receptacle, the interior channel annularly disposed about an interior of the base;

the lip of the trash receptacle for rotating within the channel;

the interior channel including a plurality of sockets for slidably receiving the plurality of notches thereunder, the plurality of sockets disposed about an upper perimeter edge of the channel, each of the plurality of sockets including a wall extending into the channel for stopping a forward progression of the plurality of notches and securing the notches under the plurality of sockets;

a plurality of legs disposed annularly about a lower perimeter edge of the base, the plurality of legs extending downward and outward at an angle relative to the base;

a plurality of wheels rotatably coupled to the base, the plurality of wheels disposed annularly about a lower end of the base.

2. The trash can assembly of claim **1**, further comprising one or more trash bags tapering in diameter from a closed lower end to an open upper end, such that the one or more trash bags are sized to fit into the trash receptacle, wherein the open upper end includes a drawstring for tightening and closing the one or more trash bags.

3. The trash can assembly of claim **2**, wherein each of the one or more trash bags includes a length greater than a length of the trash receptacle, such that when inserted into the trash receptacle the open upper end of the one or more trash bags protrudes from the upper end of the trash receptacle.

4. The trash can assembly of claim **1**, wherein the base further includes an interior compartment having an interior volume sized to receive a box of trash bags, the interior compartment including a hingedly connected cover for providing access to the interior compartment.

5. The trash can assembly of claim **4**, wherein the cover includes a watertight seal when closed.

6. The trash can assembly of claim **4**, further comprising a box sized to fit into the interior volume of the interior compartment of the base, the base configured to house trash bags therein.

7. The trash can assembly of claim **4**, wherein the plurality of notches include a tapered side.

8. The trash can assembly of claim **1**, wherein each of the plurality of legs includes a front face having a curved surface for providing an area for users to position their feet when immobilizing the trash can assembly.

9. The trash can assembly of claim **8**, wherein the front face includes a grip.

10. The trash can assembly of claim **9**, wherein the grip includes a plurality of strips including a high-friction material, the plurality of strips extending along a longitudinal length of a leg.

11. The trash can assembly of claim **1**, wherein the plurality of wheels are disposed behind the plurality of legs and include a length greater than a length of the plurality of legs, such that when the plurality of wheels are placed on a surface the legs are suspended above the surface in front of the wheels.

12. The trash can assembly of claim **1**, further comprising a lid hingedly connected to an edge of the upper end, the lid for providing access to the opening of the upper end.

13. The trash can assembly of claim **12**, further comprising a latch for fastening the lid to the trash receptacle.

14. The trash can assembly of claim **1**, further comprising one or more handles disposed on an exterior of the trash receptacle.

* * * * *